U.S. Cancer Statistics Data Brief

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Incidence of Screening-Detectable Cancers Among Non-Hispanic American Indian and Alaska Native Populations 2014–2018 (Purchased/Referred Care Delivery Areas)

Screening-detectable cancers, specifically colorectal, lung, female breast, and cervical cancers, make up a large percentage of cancers among non-Hispanic American Indian/Alaska Native (AI/AN) populations. Incidence rates for these cancers vary by geographic region. The highest incidence rates were seen in the Southern Plains; lung cancer in males and breast cancer in females. The lowest rates in males were observed for lung cancers in the Southwest and for cervical cancer in females in the East.

Purchased/Referred Care Delivery Areas (PRCDA) are counties that contain federally recognized tribal lands or are adjacent to tribal lands. Race classification for the non-Hispanic American Indian/Alaska Native (AI/AN) population is more accurate in these counties. Please see CDC's Data Visualizations tool technical notes for more details.

Differences in the occurrence of certain types of cancer among AI/AN populations compared to other populations have been described previously.[1] These differences could be due to a variety of factors, including different exposures to pollution,[2] social factors, built environment,[3,4] and access to health services to find cancers early (screening).[5]

Screening-detectable cancers are cancers for which the U.S. Preventive Services Task Force has found evidence that early detection through the use of screening tests, together with follow-up of abnormal tests and treatment, is beneficial in reducing cancer-related deaths.[6] Studying the distribution of these cancers may lend insight into reducing cancer risk and promoting cancer screening among AI/AN populations. This data brief analyzes screening-detectable cancer rates among AI/AN populations in PRCDA counties across six regions: Alaska, Northern Plains, Southern Plains, Pacific Coast, East, and Southwest.

References

[1] Melkonian SC, Weir HK, Jim MA, Preikschat B, Haverkamp D, White MC. Incidence of and trends in the leading cancers with elevated incidence among American Indian and Alaska Native populations, 2012–2016. *American Journal of Epidemiology* 2021;190(4):528–538. DOI: 10.1093/aje/kwaa222.

[2] McOliver CA, Camper AK, Doyle JT, Eggers MJ, Ford TE, Lila MA, Berner J, Campbell L, Donatuto J. Community-based research as a mechanism to reduce environmental health disparities in American Indian and Alaska Native communities. *International Journal of Environmental Research and Public Health* 2015;*12*(4):4076–4100. DOI: 10.3390/ijerph120404076.

[3] Warne D, Lajimodiere D. American Indian health disparities: Psychosocial influences. *Social and Personality Psychology Compass* 2015;9(10):567–579. DOI: 10.1111/spc3.12198

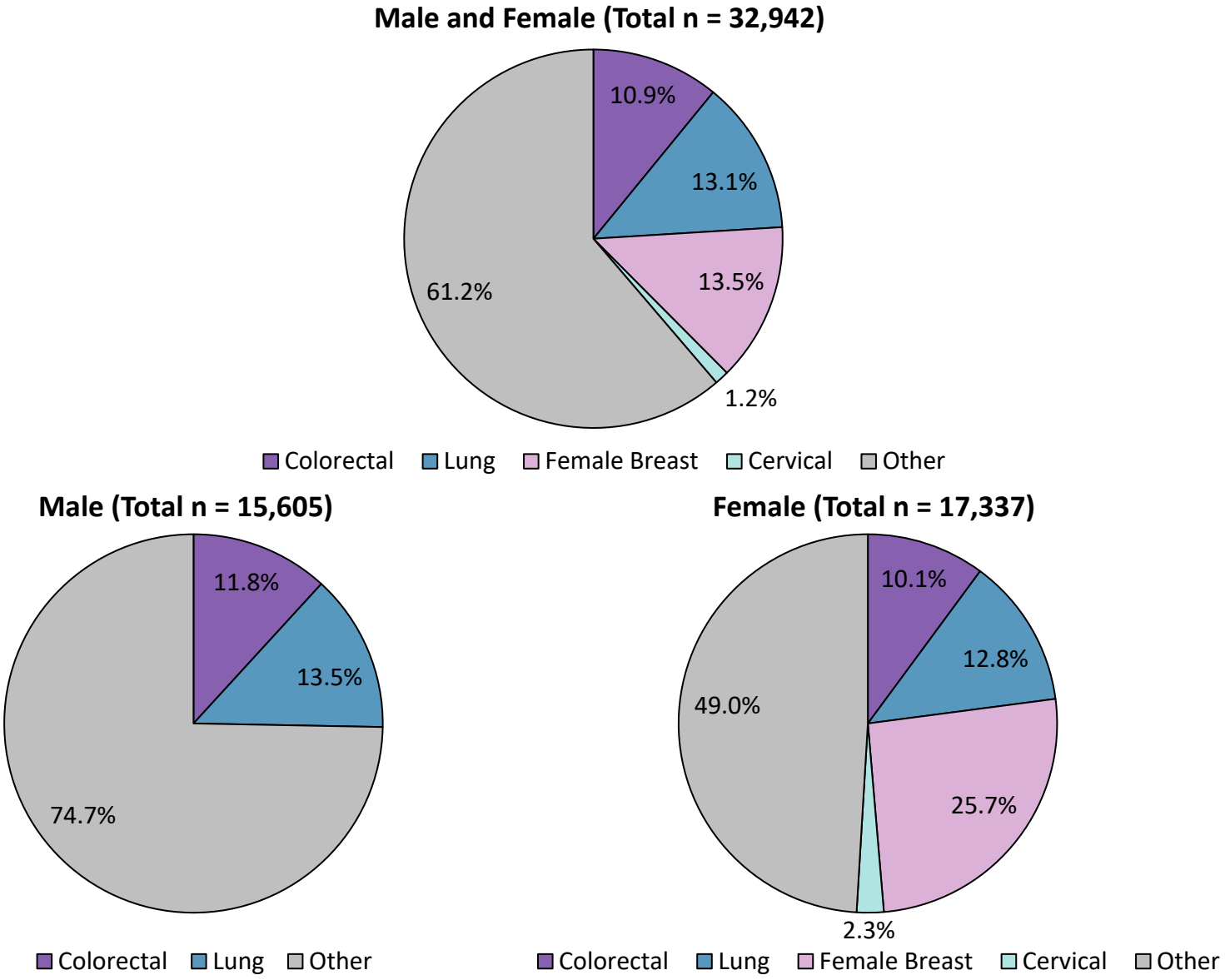
[4] Warne D, Wescott S. Social determinants of American Indian nutritional health. *Current Developments in Nutrition* 2019;3(Suppl 2):12–18. DOI: 10.1093/cdn/nzz054

[5] Towne SD, Smith ML, Ory MG. Geographic variations in access and utilization of cancer screening services: examining disparities among American Indian and Alaska Native Elders. *International Journal of Health Geographics* 2014;13(1):18. DOI: 10.1186/1476-072x-13-18

[6] U.S. Preventive Services Task Force. Cancer Recommendations. https://www.uspreventiveservicestaskforce.org/uspstf/recommendation-topics/uspstf-and-b-recommendations. Accessed August 2021.

Number of New Screening-Detectable Cancers 2014–2018

Figure 1. Percent Distribution of Screening-detectable[a] Cancers Among All Cancers in AI/AN[b] Population by Sex, 2014–2018



[a] Screening-detectable cancers refer to cancers for which there are specific population-based screening recommendations with a net benefit in terms of reducing cancer deaths.
[b] AI/AN refers to non-Hispanic American Indian or Alaska Native individuals living in PRCDA counties.

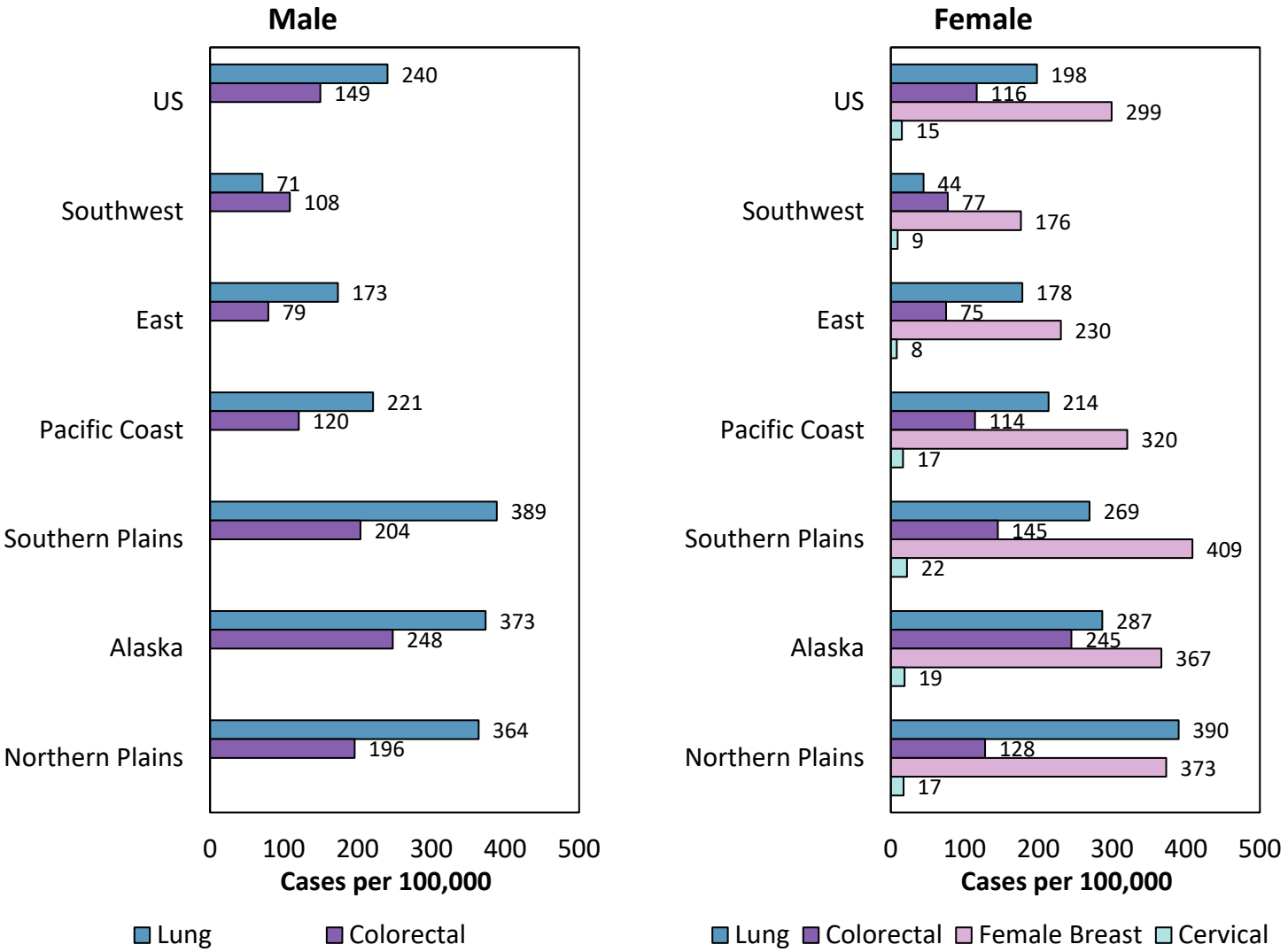
Between 2014 and 2018, a total of 32,942 cancers were reported for the AI/AN population, with 15,605 for males and 17,337 for females.

Screening-detectable cancers accounted for 39% of all new cancers in AI/AN males and females during this period.

- For AI/AN males, about a quarter (25%) of all new cancers were screening-detectable, of which lung cancer (14%) was the most common.
- For AI/AN females, more than half (51%) of all new cancers were screening-detectable, of which breast (26%) and lung (13%) cancers were the most common.

Rates by Sex and Region

Figure 2. Age-adjusted Incidence Rates[a] per 100,000 for Screening-Detectable Cancers[b] Among AI/AN[c] Populations by Sex and Region, 2014–2018



[a] Rates are age-adjusted to the 2000 standard U.S. population.

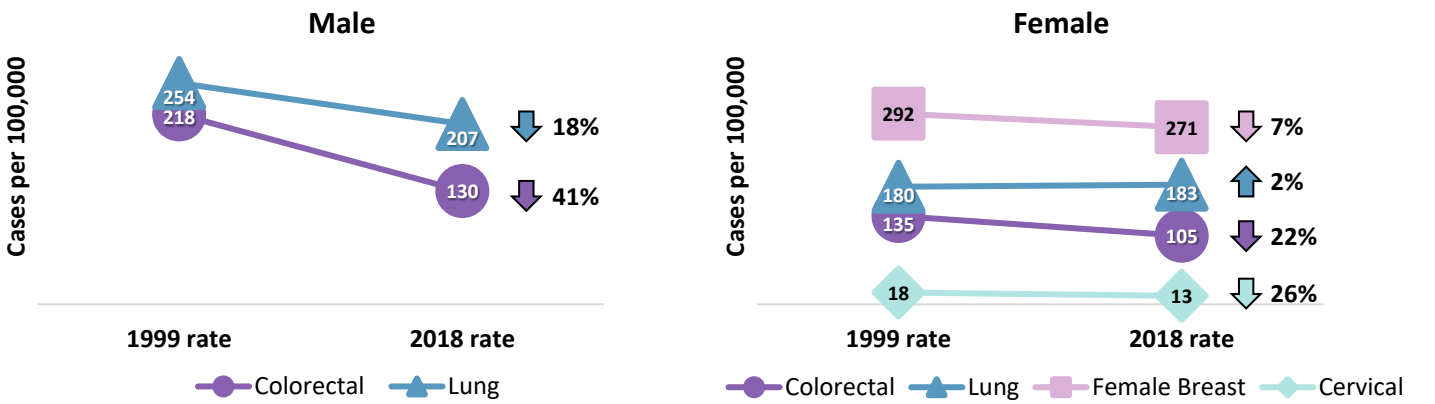
[b] Analysis was limited to cases that met the following age cutoffs: colorectal cancer, 45 or older; lung cancer, 50 or older; female breast cancer, 50 or older; cervical cancer, 20 or older. Single-year age data are not available in the dataset; therefore, the age cutoff for cervical cancer does not reflect the screening recommendation of 21 years.

[c] AI/AN refers to non-Hispanic American Indian or Alaska Native individuals living in PRCDA counties.

- Sex-specific rates of each screening-detectable cancer in Alaska, the Northern Plains, and the Southern Plains were higher than their corresponding rates in the overall US AI/AN population. Meanwhile, rates in the East and Southwest were lower than the corresponding rates in the overall US AI/AN population.
- Colorectal cancer rates ranged from 78.9 (East) to 247.5 (Alaska) in males and 74.9 (East) to 244.6 (Alaska) in females.
- Lung cancer rates ranged from 71.0 (Southwest) to 388.5 (Southern Plains) in males and 44.3 (Southwest) to 390.0 (Northern Plains) in females.
- Breast cancer rates for AI/AN females were lowest in the Southwest (176.2) and highest in the Southern Plains (408.6).
- Cervical cancer rates ranged from 8.0 (East) to 21.9 (Southern Plains).

Differences by Year of Diagnosis

Figure 3. Change in Incidence Rates[a] of Screening-Detectable Cancers[b] in AI/AN[c] Populations, 1999 to 2018



	Male				Female			
	1999 rate	2018 rate	% change	AAPC[d]	1999 rate	2018 rate	% change	AAPC[d]
Colorectal	218.2	129.8	-40.5	-1.2	135.0	104.7	-22.4	-0.8
Lung	254.3	207.4	-18.4	-1.5	179.5	182.6	1.7	NS
Female Breast	NA	NA	NA	NA	292.3	270.6	-7.4	NS
Cervical	NA	NA	NA	NA	18.2	13.4	-26.4	NS

Abbreviations: NA: Not Applicable; NS: Not Significant

[a] Rates are age-adjusted to the 2000 standard U.S. population. The change in rates was calculated as the total percentage change from the rate in 1999 to the rate in 2018.

[b] Analysis was limited to cases that met the following age cutoffs: colorectal cancer, 45 or older; lung cancer, 50 or older; female breast cancer, 50 or older; cervical cancer, 20 or older. Single-year age data are not available in the dataset; therefore, the age cutoff for cervical cancer does not reflect the screening recommendation of 21 years.

[c] AI/AN refers to non-Hispanic American Indian or Alaska Native individuals living in PRCDA counties.

[d] AAPC refers to annual average percent change, calculated using joinpoint regression. AAPCs reported represent significant changes in cancer incidence trends

- Among AI/AN males, lung cancer incidence rates decreased 18% and colorectal cancer incidence rates decreased 41% between 1999 and 2018.
- Among AI/AN females, colorectal, breast, and cervical cancer incidence rates decreased from 7% to 26% between 1999 and 2018. However, lung cancer incidence rates increased 2% from 1999 to 2018.

Data Sources

Data in this brief come from U.S. Cancer Statistics, the official federal cancer statistics.

U.S. Cancer Statistics incidence data are from population-based registries that participate in CDC's National Program of Cancer Registries (NPCR) and/or the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program and met high-quality data criteria for the 2020 data submission, covering 99% of the U.S. population.

More Information

- US Cancer Statistics Data Visualizations Tool
- Cancer within Native American and Alaska Native Populations
- Cancer in American Indians and Alaska Natives in the United States
- Cancer Screening Tests

Suggested Citation

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